# HOW CAN ELECTRONIC VIDEO MONITORING HELP SCIENTISTS?

Fisheries and Oceans Canada (DFO) scientists are responsible for assessing the status of our oceans, contributing ecological information into key management decisions. Currently DFO science relies on several data collection tools to assess the ecological status of fisheries, including target species and species caught as bycatch. These tools include Research Vessel surveys, fishery dependent Catch Per Unit Effort (CPUE) data, at-sea observer records, fishery specific logbooks, port sampling and dockside monitoring.

Despite the existence of the at-sea observer program, there is continued concern about the quality and validity of the data, which therefore limits its use by science. Electronic/video monitoring (EVM) can be a valuable resource to DFO scientists. While it may not be a replacement for on-site data collection and biological sampling (eg. otolith collection, weight etc.), there are several benefits to electronic/video monitoring (EVM) which are outlined below:

## INCREASE DATA SOURCES

Scientists rely largely on fishery surveys for data with which to conduct stock assessments and provide management advice. While research surveys are critical to fisheries data, there is often a need to augment such data, particularly when there are survey anomalies or inconsistencies (e.g., vessel breakdowns, seasonal variations in fish abundances). EVM can provide **an additional data source through additional coverage** on fishing vessels, across a broad spatial scale, thus **augmenting the data available** to assess fisheries impacts on target and bycatch species.

## INCREASE COLLABORATION

EVM provides a **platform for collaboration** with various other parties, including the fishing industry, academic researchers and non-government organizations. Collaboration with industry is particularly valuable as it allows for **more validated data** being provided directly from fishermen, potentially making fishermen more accepting of science outcomes.

## INCREASE DATA COLLECTION

Scientists rely on data collection from surveys, at-sea observer records and fishery logbooks to assess population status. EVM provides **increased data collection capabilities** with the potential to reach 100% catch monitoring, dependent on the level of video review. EVM also **expands upon data which is currently collected** in Species at Risk Act (SARA) logbooks and from at-sea observers by **removing bias and improving the quality of data** that is being collected through a real-time, or near real-time, validated delivery.

## INCREASE STAKEHOLDER CONFIDENCE

EVM provides scientists, the fishing industry and the public with increased confidence in the data being collected and used for critical management decisions. This is possible through the **direct and systematic monitoring** of the entire vessel throughout the fishing operations and in collaboration with a **complex data analysis system**, which can be **directly input into current scientific assessments**. EVM will allow for not only increased confidence and acceptance, but also support of the data used for key scientific assessments.

## VALIDATION & SCIENTIFIC CONFIDENCE

EVM provides **higher confidence, more detailed, abundant and validated data** on key components relied on by science to feed directly into the species status and stock assessments. Through **simultaneous analysis** of the entire vessel, **100% monitoring potential** (depending on the level of video review) and real-time, or near-real time, direct delivery of the data, scientists can validate catches and logbook data (including species, length, location, etc.) and be confident in the quality and accuracy of the data.

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This project was undertaken with the financial support of the Government of Canada.

Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.

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